

JARVIS, (E.)

Volume Seven
from Edward Jarvis

LAW OF PHYSICAL LIFE,

BY

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(3), 2188A7.

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SEPTEMBER, 1843.

LAW OF PHYSICAL LIFE.*



To the subject of Human Physiology, its elucidation, its importance and practical usefulness, Mr. Mann has devoted the larger portion of his last report, and has given therein a most interesting discussion upon the law of physical life. It is written with the accuracy and has the clear demonstration of science, and exhibits the beautiful fervor of eloquence and poetry, that so distinctly characterize the productions of this faithful and earnest philanthropist.

His object is to show — 1. the structure of our animal frame and of its organs, their wants, their uses and relations to the external world ; 2. our responsibility concerning them ; and, 3. that our health and comfort, our fulness and power of life depend upon our faithful discharge of that responsibility, and our fulfilment of the conditions of our earthly existence, and that from our unfaithfulness, in this regard for the laws of our being, come our pains, our ailments, and our early death.

This is a field of useful research ever present to every individual of the human race. It may be productive beyond measure of good, or it may yield only pain and sorrow. Yet few have thought it worth their attention to enter upon and examine it; still fewer have cared to cultivate it, so that it may bring forth the full fruits of health and life.

* Sixth Annual Report of the Secretary of the Board of Education. By HORACE MANN.
(Notice continued from page 381 of the last volume.)

by Edward Jarvis

There is a common notion, that life is a mystery ; that health is the gift of nature ; that diseases are God's chastenings, and death comes at its own appointed time, and therefore we have nothing to do in the matter ; that study into these things is a vain endeavor to find out the unsearchable ; and all attempts to increase our strength or protract our life will be but an ineffectual struggle against the Almighty. Such, we believe, is not the lot of man here below. Far different is our condition, far wider is our duty in respect to the maintenance of our physical being on earth. We are not to be the mere passive recipients of the means of life, nor careless revellers in the midst of them. Still less are we to scorn and neglect them and bury them in the ground. For all the things of the world are created by God in infinite wisdom, and all its circumstances are arranged in infinite love. Every one of the numberless blessings granted to us has an especial design ; and to the enjoyment of each there is affixed a condition for us to fulfil. Thereupon hangs a duty of knowledge and obedience ; and a responsibility to ourselves and to God for all the consequences of neglect. Hence comes the necessity of our studying the laws of life and of health, the conditions of our present existence, and the means put into our hands for their fulfilment.

All men seem to have a general notion of the means by which life is sustained ; yet few are well acquainted with their minute and daily administration. Every one is aware of the need of food, clothing, and air : but how these shall be prepared and taken, in what manner and in what measure, this is the question, on which men differ, both in their theory and in their practice ; and hence come the very different results of health and strength in various persons.

"The earth was given us by a generous Providence for our habitation. Our organs and their functions, and the necessities of our powers are perfectly fitted to external nature. Between the wants of the animal body and the elements there is a beautiful harmony. For every need of our organs or our life God has created an abundant supply. Some of these things are supplied to us all ready for our use,—as the air for the lungs and respiration, the light for the eye, the water for drink : other things are given to us in the raw material unfit for use. But then we have intellect given us to perceive the powers and worth of these, and their convertibility into such shapes or combinations as our bodies may require." — p. 90.

Our bread is not prepared nor our meats cooked for our tables, but we have the earth with all its capacities of bringing forth her seeds and fruits, we have hands to cultivate the soil, and minds to learn the way to gather our bread from these. God has appointed no necessity of our being without pointing out the way, and giving us the means of supplying it. Our breath comes directly from his hands. Our clothing, our shelter, and our food come indirectly from him, through the instruments, that he has bestowed upon us. The things God himself has prepared for us are perfect, and no art of ours can improve them ; but, on the other hand, we may interfere, and render them unfit for our wants. We may taint the air we breathe, we may corrupt the water we drink, and thereby impair their power of sustaining life. All that comes to us, through our own agency, requires the most careful observation, first, to learn the structure and wants of our frames, and, second, to know the means of supplying those wants. This is not a matter of indifference. The animal frame, in its original structure, is not elastic as to its wants, nor careless as to its supplies. The conditions of its being are fixed, and we cannot change them, but the measure of that being, its power and its comfort will vary with our success in conforming to those conditions. The quantity of nutriment, which we supply to our bodies, must be precisely suited to the wants of nutrition, and its quality as exactly fitted to the powers of digestion. The same material may, in one form, be very useful, and, in another, very injurious. We waste and die if our food be insufficient ; we bloat and die if it be more than enough ; but the medium between these extremes nourishes and invigorates us. We are powerless if we have no exercise ; we are exhausted if we toil excessively ; but moderation in labor develops our powers. To hold the nice balance between excess and deficiency in these things, to use all the materials and all the means of life exactly for the purposes for which they were designed, to indulge all our passions and appetites, to give play to all our propensities, just so far as will be advantageous to the animal economy, neither wholly denying them, on the one hand, nor living solely for them on the other ; these are duties for our intellect and our conscience to know and to enforce ; and in proportion to our faithfulness in this matter, will be the measure and the enjoyment of our life on earth.

God has put our lives, partially at least, into our own hands. Whether we shall live to the fulness of our years, and give to each day its fulness of strength and pleasure, or whether we shall be miserable invalids, ever moving toward the grave and cut off in the morn, noon, or eve of life ; these depend upon our obedience to those laws which God has stamped upon our frames.

It is a melancholy consideration to compare what we actually are, with what we might be. Few of us are conscious, how far short we come of our real or our possible destiny ; for few are aware, how much strength and comfort we might here enjoy. We hardly seem to understand what health is. Now and then we see a man, in whom physical life is fully developed, his form is erect and his motions free ; there is strength in his frame and roundness in his limbs ; there is a glow on his cheek, a morning freshness in his countenance ; there is energy in his spirit and cheerfulness in his heart ; he is in full possession of all his powers, and ever ready to apply them to any honest purpose. This is the full measure of health, and it must be so continued, for threescore and ten years, to give him the full measure of life. Thus would he have, during his earthly pilgrimage, seventy times three hundred and sixty-five days full of enjoyment, and be able to accomplish twenty-five thousand, five hundred and fifty full days' labor undisturbed by sickness or pain.

This is health : this is life : this we believe to be man's natural destiny on earth. And all our variations from this, at least all our short comings, are the consequences of our failure to fulfil the conditions of our existence here.

It needs no demonstration to show, that not one of us attains this ; that our race, even in its best and most favorable circumstances, does not probably exceed thirty-three per cent. of the fulness and duration of life, which God has given us the means of enjoying. The world's history is a terrible record of the abatement, that is made from our life in its progress, and of the curtailment at its end.

Instead of living to threescore and ten, from our very birth we are surrounded with death ; no age is free ; nursing infancy, hopeful youth, vigorous manhood, all have fallen before the destroyer. For, "man that is born of a woman is of few days and full of trouble. He cometh forth like a flower and is cut down : he fleeth also as a shadow and continueth not."

Job was a prophet as well as poet, for his words are as true now as they were in his own time. In Boston, from 1811 to 1838, more than thirty per cent. of all, who died, were less than two years old, and forty-seven per cent. had not passed their twentieth year, and less than seven per cent. reached their threescore years and ten. In Concord, Mass. from 1778 to 1843, more than seventeen per cent. died within two years and more than thirty-two per cent. died within twenty years from their birth, and only twenty-two and seven tenths per cent. passed their seventieth year. By the report of the Registrar General, we find that, in England and Wales, during the year 1841, almost twenty-three per cent. were under one year, fifty-two per cent. had not passed their twentieth year, and only fourteen per cent. had overstepped their seventieth year, when they died.* The average duration of life in Concord, the most favored of these places, was a few days less than thirty-nine years. Abbreviation of life is not confined to the countries or towns here mentioned, nor to the present age. The same sad tale is told in every graveyard on the globe. Wherever man has lived, from Noah till our day, there as well as in Rama has a voice been heard, "lamentation, and weeping, and great mourning. Rachel weeping for her children and would not be comforted, because they were not." Such as escape the havoc of the nursery seem but to be reserved for other destructive influences, and before we have fairly entered upon the threshold of manhood, half of our race, have fallen beneath the destroyer: only a feeble remnant have filled out the full measure of time allotted to man on earth, and these, wearied with the frequent struggle with sickness and worn out with labor, have gone down to the grave as a resting place.

Nor is this all, that we fall short of the full measure of our destiny on earth. Even this short period, averaging, throughout the world, not more than thirty-five years, is diminished at every stage, reduced at every turn, and taxed throughout with innumerable burdens. The whole catalogue of diseases, whose

* In England and Wales, in 1841, there were

Births.	Deaths.	Deaths under 1 year.	Proportion of deaths under 1 year to births.	to total deaths.
501,589	350,101	78,328	15 per cent.	22 per cent.

Third Report of Registrar General, p. 65.

name is legion, is borne by our race ; and, cut short as our years are by the abbreviation of our term, we yet are obliged to contribute time for sickness and debility.

Deduct the months, during which we are prostrated by disease and under the control of others ; deduct the seasons, when, though we are not diseased, yet are invalids, with constitutions broken or powers wasted, dragging onward a wearied existence, in premature old age ; deduct the periods when our energies are somewhat paralyzed, and our strength so far reduced below its just standard, that we cannot enter upon the full tide of active business, which men in health freely venture upon, or can only engage in inferior, lighter, and less desirable employments than we otherwise would undertake, and therefore accomplish less and enjoy less than we might ; deduct the periods when we are slightly ailing, whether from cold, from headache, or other trifling cause, and our frames are sluggish and our resolutions dormant, when we cannot in the day or in the hour, do its own appointed work ; deduct the times when we are heavy, stupid, and inactive, when our energies are absorbed in digesting improper or excessive food, when we are dull and sleepy out of due season ; lastly, deduct the moments when we are irritable in temper, timid of purpose, or gloomy in spirit, when our moral powers are weakened and disturbed, and our mental faculties oppressed ; — add to these the thirty or thirty-five years which we lose by premature death, and deduct the whole from a complete human life, from twenty-five thousand five hundred and fifty days of health, unimpaired by sickness, unalloyed by pains, and it is wofully manifest, how small a fraction of our natural destiny we obtain out of the means and facilities, which a most generous Providence has placed in and about us.

If then our Creator has given us the material of a healthy and a full life of seventy years, and yet nearly two thirds of this is lost to us, it becomes a serious question for man to ask and to learn, what are the causes of this depreciation and loss. Without pretending, that all these causes can be explained in the present state of human knowledge, we feel justified in saying, that more than half of our physical ills and of our deaths, arise from an ignorance of those laws of our being, which are known to some of mankind, and from a disobedience to those laws, when once revealed to us. A slight examination of some of the most important organs of the animal body, and their wants

and relations to external nature, will show us what are the conditions of health and life, and a comparison of these with our actual history will show wherein we fail.

"The health, vigor, and longevity of the human family are almost entirely dependent upon these things.

1. A sufficient quantity of wholesome and nutritious food well prepared before it is sent into the stomach.

2. The due vitalization of the blood in the lungs.

This vitalization of the blood is effected by our inhaling the necessary amount of pure air, which is impossible without active exercise.

3. Personal cleanliness, by which is meant cleanliness of the whole body." — p. 134.

4. Sufficient exercise of the muscular system.

The first law of our nature is the necessity of nourishing the body. For this purpose, we have the digestive apparatus within, and the fruits of the earth without. By the help of our organs, we convert dead vegetables, seeds, fruits, bread, and meats into our own living flesh. For every part of this process, we have the means sufficient, appropriate, and at our command. We break up the food and mix it with saliva in the mouth. It is reduced to a pulp and mixed with the gastric juice in the stomach. It is separated into the nutritious and the waste in the canal beyond. There, that, which is to support the body is taken up by a thousand mouths, and carried through one tube to the great vein and mingled with the blood near the heart. This is digestion.

The heart is placed in the centre of the chest, and contains two sets of cavities, one for the reception of the old blood as it comes from the whole body, and the new chyle as it comes from the digestive organs ; thence this new and old blood is sent to the lungs to be vitalized by the action of the air. The other cavity receives the perfected blood from the lungs, and sends it again through the whole frame.

"The whole blood of the system pours through the heart, and issues forth from it in one great stream, which is afterwards so minutely subdivided as to reach every part of the body."

"The blood vessels lie so closely side by side, that a needle cannot find any unoccupied space or interstice between them."

"The blood carries nutritious particles as its freight, and every point in the whole system is the port where it unlades its

treasures, and in return it receives the waste and used-up particles, which every part of a healthy body is constantly throwing off." — p. 105.

When the blood goes out from the heart, it is of a scarlet color and moves in the arteries, it has been enriched with new supplies from the food, and been perfected in the lungs. It is now the storehouse, whence the wants of the whole system are supplied. Out of this blood, the bones, the muscles, the brain and the hair, the skin, the textures of the eye, and the nails, every organ and every part of the system are formed and renewed.

After having performed this work of nutrition, the blood becomes purple, and is found in the veins returning to the heart; not only is its life gone, but it is laden with the dead and wasted particles, which have been thrown into it in its progress in every part of the body.

It is a law of life, that it cannot long abide in the same matter. Therefore, every particle of the animal frame dies after having occupied a space and performed an active part, for a short period in the living economy. It is then taken up by a set of vessels appointed to do this work, and thrown into the veins. Another particle, fresh with new life from the arteries takes its place, lives, acts and feels a while, and then gives place to its successor. Thus our bodies are undergoing a constant change. That which constituted our frames yesterday does not constitute them to-day. We are not the same identical beings from hour to hour.

Here we may see the beauty and the harmony of nature's operations, the law of life and the law of chemistry working together for one purpose, for the health of man; for God established them all. These exhausted particles, which have played their part in the animal body, are principally composed of carbon. They are dead, useless in the living system, a burden, a poison, and must therefore be carried out from it. What human contrivance could carry these out, from their myriads of veins buried in the deepest recesses of our frames? But He, who made our bodies, made also the air. He understood our wants, and provided for them by the powers of the atmosphere. He established the lungs as the laboratory, wherein He brings the blood and the air together.

The whole of this purple blood, thus loaded with car-

bon, after returning to the heart, is then sent into the lungs, and there, in numberless minute cells, it comes in contact with the air, which we receive through the mouth and nostrils.

This air is well known to be composed of about seventy-nine parts of nitrogen, and twenty-one parts of oxygen. Oxygen has a stronger affinity for or attachment to carbon than it has for nitrogen, and therefore, in the lungs it leaves the latter, with which it existed in the state of air, and unites with the carbon of the blood, and, with that, it forms carbonic acid gas, which then mingles with the air, which we expire. Beside this, some of the oxygen of the air unites with the blood and remains in the body.

This then is the process and effect of respiration. The blood is relieved of its deadening burden of carbon, and has gained some oxygen: it is changed from purple to scarlet, and is ready to supply nourishment to the whole system. The air has lost a good portion of its oxygen, is loaded with carbonic acid gas, and so far cannot again relieve the blood of carbon, and therefore cannot serve the purposes of respiration a second time, and is unfit to be breathed again.

The skin is also a coöoperator in this work of excretion, the carrying off the waste and dead portions of the body. The insensible perspiration, which in health never ceases, amounts to near two pints a day. These particles, like those, which are thrown off through the lungs, having finished their functions of life, are now a burden and a poison, and cannot be retained in the living body without detriment.

The skin has another office to perform; it is the protector of the frame from the external elements and from cold. The animal body generates its own heat, and maintains a temperature of 98° ; and amidst a surrounding medium of air a hundred degrees colder, this living covering stands as a faithful sentinel to prevent the escape of our natural and healthy heat.

The muscular system is the sole power, that gives motion to the body or to any of its members. By this, we walk, we breathe, we lift the hand, roll the eye, and articulate language. The muscles are distributed to the trunk and to every limb, and not only move these, but by their motions they give energy to all the other systems of the frame.

Thus we are made up of several systems. Each one performs its own appropriate work, yet all act in harmony. Each does its duty independently, but no one can labor, without the

coöperation of all the rest ; and our life is the result of their combined and harmonious operations. If any one is sluggish, all droop. If any one is overworked, all suffer weariness ; and in either case, life is imperfect.

The strength of each system is latent until developed by exercise ; and it is then increased more and more, up to a certain limit, by continued exertion. The muscular system of the laborer is stronger than that of the counting-house clerk. The arms of the sailor, the legs of the pedestrian, the back of the porter, the lungs of the trumpeter, the brain of the reasoner are more powerful than these organs are in other men not exercised as these are. The careful female, who never has walked a mile, cannot walk that space, not because she is primarily weak, but because she has not developed her locomotive powers. And connected with this deficiency of muscular power and want of exercise, we shall find a feeble digestion, an inactive brain, and an irresolute spirit.

In all these several systems for digestion, respiration and circulation, in the skin and the muscles &c., there is no error, no deficiency nor redundancy. So far as these are needed, they are sufficient for health. What God has done for us is well done. But there are conditions fixed for their active existence, and the means of fulfilling them are put into our hands. We are charged with the duty of administering these means, and applying them to the wants of our organs and bodies. We are the coöoperators with our Creator in the maintenance of our lives ; and if our work were as perfect as his, we should enjoy the consequence of perfect health. An examination of the manner, in which we perform our part in the support of life, will show wherein our weakness lies, and whence come our ailments and our early death.

For respiration, the air is prepared all ready for use ; it is compounded and elaborated exactly to suit the powers of the lungs and meet the wants of the blood. It contains precisely that proportion of oxygen and nitrogen, which will best remove the needless carbon from the purple blood, and carry these dead impurities out of the body. More oxygen in the air would carry off the carbon too rapidly and leave us weakened. Less oxygen would not relieve the vital streams of their oppressive load. The mixture of any other gas or material with the air, would impede this nice operation within our lungs, and injure the texture of these delicate organs.

This function then has one simple condition for us; that is, *to give the lungs pure air.* Let it be renewed and fresh at every inspiration. Seeing, that the atmosphere encircles the whole earth and is forty-five miles in height from its surface, and the restless winds leave no corner unvisited by their unadulterated breezes, it would seem that this is not a hard condition: but one that man would ever obey. And if we dwelt "in houses not made with hands," we could not violate it. Yet we do sin against this law. We box up this boundless air in small rooms, and there we breathe it over and over. And although every time it goes out from our lungs, a large portion of its oxygen, its life-giving property, is lost, and carbonic acid is mingled with it, yet we inhale it again and again. We gather in crowds, at private assemblies, and in public halls, in churches and in theatres. We besoul the air, in a very short time, and yet continue to use it, and vainly imagine that we are doing our part of the work of respiration. We imprison our children in narrow school rooms, and put them there on a short allowance of this costless element; and that pittance which we allow them becomes so corrupted, that one can hardly enter those little halls of learning in the winter, without feeling oppressed.

"Now the mother violates this rule, when she sinks her babe in the pillows of a cradle or crib: and, by so covering it up as to impede the access of fresh air to its lungs, may with almost literal truth be said to bury it alive. Parents violate this rule when, for the sake of guarding their children against what they call the inclemency of the season, they make their children sleep—or sleep themselves—in a small room, with closed doors and with windows carefully caulked to keep out the cold.

"This law is flagrantly violated, when children are kept indoor for days together, although the weather be as cold as our latitude will permit, instead of being sent out daily and several times a day, to take such vigorous exercise as will keep them warm in the open air." — p. 137.

Men violate this law of God, when they live among and breathe the dust of certain shops and highways, the fumes of foundries, and the gases of breweries. They selfishly violate this law of life, when they smoke tobacco in parlors, in public rooms, in the busy streets, where they not only corrupt their

own air with this smoke, but rob others of that purity of the atmosphere, which has been made not merely the right but the necessity of all, who would enjoy the fulness of life. In these ways they weaken or corrupt the air, and thereby take from it some of its power to purify the blood, and give life and energy to the body, or they load it with offensive matters, that will irritate the delicate texture of the lungs, derange their operations, and often create disease.

Water is the only drink, which nature has prepared at our hands, and this is all sufficient for our thirst. Yet we have made many compounds of evil, by mingling other things with it. Some are narcotic and lie like burdens, impeding the powers of life; others are stimulant, and excite them above their natural actions. Some of them allay no thirst, but rather increase it; others interfere with the function of digestion.

For our respiration and our drink our duty is merely negative; God only requires of us not to interfere with his work, but to partake freely of that, which he has liberally provided for us. But in regard to our food we have a more positive duty. We have our digestive organs and their powers of converting nutriment into flesh. We have the earth and its capacity for producing that nutriment. We have our own hands to till the ground and mould its productions into such shapes as will meet our animal wants. So far God has done the work for us; what remains he has charged upon us to do, and given us the means, and the motive to do it right. It behoves us then first to study our organs, their powers, and their wants; next to learn what are the best means of supplying their wants; and lastly to administer faithfully the supplies, in just that quantity, which the nourishment of the system requires. If our administration of the material and the powers put into our hands should correspond to the wisdom of the whole preparation, then all our eating would nourish and invigorate us. Our food and our digestion would give us nothing but strength, comfort, and pleasure. Neither pain, oppression, nor disease would ever flow from them. This presupposes, that we learn the law, and are obedient to it. For ignorance and disobedience are followed by the sure consequences of disorder, weakness, and perhaps of death. It is left for us, each to determine which he will choose; to live as God has appointed and enjoy health and strength, or to live

without the law, as appetite and caprice may dictate, and suffer pain and disease.

This law of adapting our food to the wants of nutrition and the powers of digestion is daily violated. Some task their digestive organs to weariness and disorder. They are overloaded and heavy. Their nervous energies are all absorbed in the single process of converting food into flesh, and they have therefore but little activity of mind or energy of body. The slaves of appetite, they openly live to eat ; and practically eat to die.. These are gourmands, whose sensual lives seem to strike us with horror. But there are thousands among us, who violate the same law, and are suffering similar consequences. Their sin and their punishment differ from those of the sensualist only in degree but not in kind. Those hardy men, who know not what they eat and care not what is offered them—and yet are occasionally oppressed—those kind men, who sacrifice their comfortable digestion rather than give their provider pain, by requesting their food to be adapted to their powers—those, who partake of extraordinary dinners and night suppers—all these violate this law of life. The stoic, who denies his appetite every gratification, and the epicure, whose palate is his ruling principle, both sin against the same command, though from opposite motives. Whenever we are induced to eat that which is not wanted to nourish the body, or which is not perfectly within the power of the stomach to digest, so far as this gives trouble or is ill suited to the wants of the system, we violate the law. In every case, the punishment of pain, disease, or languor is the consequence of the error, and is proportioned to its amount.

The law of muscular exercise is given to us in general terms, and it is left to our discernment to know the manner and the quantity. Yet, in an appropriate degree, it is absolutely necessary. It is manifest from too many examples, that, without it, there can be no fulness of life, and that the excess of it is weariness and exhaustion and partial death. It is also certain, that this exercise should be regular and unfailing. If we wish to gain for ourselves the fullest advantage from this, we must not concentrate the physical labor of many days in one, and have long periods of inactivity after it. For those, who are engaged in sedentary employments, each day should have its own exercise abroad : and for the laborious, each day should

have no more than its own. It is the business of the first to determine, how much he needs, of the second to ascertain how much he can bear, and of both to keep within the proper medium.

Notwithstanding this law is published and imperative, we see transgressions against it, of every sort and degree. We see men and women confining themselves to their houses and their rooms for days, or even weeks together, thinking their nutrition will go on of itself without their aid, and endeavoring to carry on their mental operations, with their usual vigor. The ambitious student hopes to gain time for his books, by shortening the hours of his walks in open air, or perhaps by cutting them off altogether. The book-keeper attempts to stand at his desk, and the tailor and the shoemaker to work at his bench all the hours of the day, which are not absolutely required for eating and sleeping. Some of these transgress more, some transgress less against the law; but all are offenders, and all suffer the sure retribution commensurate with their sin.

The over anxious mother guards her daughters with injudicious care. In her notions of female education, fatigue is a stumbling-block, and the weather a bugbear. Her girls are restrained from exercise, and grow up inactive and feeble. The power of their limbs is never called forth, and the strength of their whole frames is not developed. The energies of the digestive and circulatory and nervous systems, correspond to those of the muscular. All that portion of life, which consists in action, courage, and command of their physical and moral powers, has never been born. Their listless days drag heavily onward; they have a quantity of existence less than their latent powers might have given them, if they had been called into exercise. Perhaps they call this life, but it is comparatively feeble and attenuated, and it is so much the more liable to be shortened as the vital principle within them is lower.

Others violate this law in the opposite extreme of over exertion, considering their muscular system as having an indefinite power of endurance; they make long days and short nights, and grudge the hours required for eating and rest. For a time, they accomplish more physical labor than their fellows, and take satisfaction in their superior industry, thinking that this extraordinary exertion may be maintained until natural

old age shall come upon them. But all their excessive toil is only borrowing life and power from days to come, which they must surely repay, and this, with usurious interest. Those days find them exhausted and weak ; and if they persevere in their undue exertions, premature old age comes upon them. Then in the midst of their years, they are decrepit and useless, because they have squandered their strength, and are now suffering the consequences of their improvidence.

The same is true in regard to any unwise expenditure of physical or intellectual power, for however short periods. Any borrowing of the future is bad economy ; one day or one week of extraordinary action must be followed by more than a day or a week of extraordinary inactivity ; the loss is ever greater than the gain ; and man accomplishes less by irregular labor, than by that systematic industry, which expends on each day its own strength and no more, without ever encroaching upon the morrow.

The day is the time for labor and the night is the time for rest. This is the universal law of nature. It is the command to man. Yet we have, partially at least, assumed to be wiser than He, who created us and made also the day and the night. We often reverse his law ; and turn night into day, and day into night. We sleep, while the sun is shining with life-giving beams, and labor under the deathful influences of darkness. Thus we are exhausted more and refreshed less. Life and power are not maintained to their highest degree, and we are more susceptible of disease and pain.

It is a cruel and a selfish as well as most unwise hope, to gain by adding night work to day toil, in ourselves or in those who labor for us. Sooner or later, this will waste the energies of the body, and impoverish the spirit, and we must then suspend our exertions or sink beneath the vain endeavor to do more than God has given us power to do.

Some seem to suppose, that although they would not transgress so far as to labor in the night, yet they may work six days in the week and devote one night to pleasure, to charity, or to the acquisition of knowledge, and suffer no depreciation of life. But the law is inexorable, it demands perfect and implicit obedience ; and he who deprives himself of the natural rest, from whatever cause, must suffer the loss of some of his natural vigor, and lay a tax, greater or less in proportion to the delinquency, upon his permanent constitution.

The skin stands in need of our aid in the performance of its double duty. It is not a mere passive membrane through which the perspiration and other excretions pass out from the body ; nor is it a dead covering like a garment to keep the cold elements from us. But, in each of these relations it performs an active and a living part ; and does its office best, when its vital principle is the strongest. The waste, that is thrown off from the body by this covering is sometimes vapour, sometimes fluid, and there is also a waxy secretion from the surface. These keep the skin moist, so that dust gathers and minglest with them, and together they choke the pores and the mouths of the glands and interrupt their functions, and hence the skin becomes sluggish and performs its part imperfectly in the animal economy, and the whole frame is heavy and life is impaired.

We have then a duty in this matter. Friction and washing would relieve the surface of this accumulated load, and let it go on rejoicing in its work. This is our law, but so plainly necessary and so surely comfortable an act of obedience is not generally rendered. We do this indeed for the hands and the face, but these we wash to be seen of men, while the residue of skin is full of all uncleanness. Very few purify themselves throughout with a daily bath. Some indulge themselves with this as an occasional luxury. But the great majority of mankind feel no responsibility for the health of this organ, and from summer to summer, they carry upon themselves the corrupting waste that has ceased to live ; and the gathered filth of months or years remains upon the skin, a deadening clog upon the vital operations.

The direct consequences of this neglect of duty, appear in many of the cutaneous eruptions, the leprous spots upon the filthy ; and in such a reduction of the vital properties of the surface that it is less able to protect the body from the external cold. Then the waste is not freely carried off, the blood circulates less freely in the skin, and is therefore thrown upon the inner organs, and their functions are thereby interrupted.

Our natural defence against the elements is greater or less in proportion to the vital energy of the skin. This power is a matter of development and growth not of entire and original creation. Like the strength of the muscles, it increases by use and diminishes by neglect. Hence we find the skin of the face, which is never covered, needs no protection, because its powers have been taxed and brought forth ; while the skin of

the breast can scarcely endure a temperature below summer heat without covering. So also the timid, who confine themselves to hot rooms, are chilled when they go into the open air of winter; while stagemen, pilots, and wagoners endure the severest weather with impunity and comfort. The cutaneous energies are reduced down to the level of the demands that are made upon them, however low; and nearly raised up to them, however high. If, therefore, we accustom ourselves to abundant clothing, we soon find we need it; and if we wear comparatively light garments, the skin will make vigorous exertions to do that which we do not. Two men may be walking, side by side, in winter; one has his daily cold bath, and wears only his close dress; the other abhors water, but puts on extra garments. Both are equally warm; the first by his vital energies; the second by his artificial covering.

Not only is present comfort better maintained by the proper administration of the skin, but we have therein a much surer safeguard against the effects of atmospheric changes. The cherished health and proper use of this organ, give elasticity to its quick discerning energies. These spring forward to defend the flesh against any sudden assault from without. Colds, rheumatism, and coughs are not the frequent attendants upon those who live ever in open air and meet all its variations; but they follow the overcautious, whose timidity has only weakened their natural powers of resisting the causes of derangement.

These are some of the most important organs of our frame, and these some of the essential conditions of their existence. No one of them is the seat of life to the exclusion of the rest; but any one may be the seat of death and include all the others in its downfall.

God has created this beautiful frame, with its hundreds of muscles and bones, its thousands of blood vessels and nerves, its complicated digestive apparatus, its nicely adapted lungs, its active skin,—all these he has formed into systems and organs, each having a separate duty to perform for the good of the whole; each doing its own peculiar work; and yet not working without the coöperation of all the rest, and the whole under the direction of the brain and nervous system. All these, varied and harmonious, constitute the machinery of our life. And this God has put into our hands to direct, to supply its wants, to suit the elements of nutrition and excretion, food and air, bathing and exercise, precisely to the necessities and condition

of each organ ; and, out of the whole, to produce the greatest amount of health. This is our responsibility. This is the " harp of thousand strings " which we are to play upon, and to bring forth the music of energy and cheerfulness. We are to play, each one of us, upon his own harp. Whether we are deeply skilled in the instrument and its uses, or are totally ignorant of both, still we must be the players ; and the music, harmonious or discordant, must be such as we individually are able and willing to produce. Our vital machine has each its own director, and admits of no substitute ; and, according to the skill and the faithfulness of this direction, will be the amount of vitality given us. It is in vain to say, we are not competent to sustain this responsibility, — for we must sustain it or we must fall. No one can assume it for us ; no one can bear the consequence in our stead. As we eat, breathe, and move, so shall we alone live or die.

Not merely, in general terms, must we obey the laws of life, in order to prevent evil coming upon us ; but in each and every particular must we be faithful. Every organ and function must be rightly administered, or health and comfort will not come to us ; but that specific pain, which follows every special act of disobedience, will inevitably come. Every righteousness brings its own reward ; and every sin brings its own punishment. The law is inexorable ; it acknowledges no compromise ; it is not satisfied with anything short of entire submission. It will receive no virtue, however great, as a compensation for any sin, however small. No matter how faithful one may be in the government of his appetites, in ventilation, in the care of his skin, and clothing, — if he neglect exercise, he certainly fails of that vigor, which it imparts, and of the power, which it contributes to the general system. The organs have all a mutual sympathy and a common interest. As, in the clock, the pendulum, the weights, and the hands are useless without the wheels, and the correct movement of any one presupposes the perfect condition of all the rest, — so in the animal body, the lungs, the brain, the stomach are powerless, if each and every other organ is not in healthy condition. A scholar bends his whole energies to the exercise of the brain. So doing he neglects the muscular system, and forgets to eat, or eats irregularly. Day and night he confines himself to his books, and hopes thereby to increase his intellectual powers. But these cannot grow at the expense of his physical powers ;

and instead of becoming strong in one function, he becomes weak in all, by thus violating the law of harmony among his members. Hence we have dyspeptics in college, consumption among ministers, and the brightest and the most promising are withered in their youth and cut off in their prime.

The laborer, who attempts to concentrate his whole nervous energies in the muscular system, the gourmand, who tries to make himself all stomach, and the thinker, who strives to be all intellect, — all these transgress the same law, and all meet with the same retribution for their unfaithfulness to their trust. The coachman, who attends only to the wheels of his vehicle, and disregards the springs, the straps, and the braces; the spinner, who watches only his spindles, and neglects the wheels and the bands, the gearing and the motive power, are not more unwise than these, nor more unsuccessful in their operations.

The laws of life are as fixed and certain as the laws of matter. In the motions of the living body cause and consequence are as inseparably connected as they are in brute substances. The principles of gravitation and of chemical affinities are not more clearly ascertained and demonstrated than those of respiration and nutrition. In all our operations, we acknowledge the former, and conform our plans and our practice to them. We build our houses on secure foundations, lest their weight overturn them; we dig our canals on horizontal planes, because water will not run up hill, and we mix nitric acid with potash to make nitre, because no other mixture will produce this salt. But it is equally certain, that nothing but the air compounded and pure, precisely as God has made it for us, will decarbonize the blood and give vigor and life to our bodies, and that nothing but proper and digestible food can be converted into living flesh and blood. In both cases a perfect cause must produce a perfect effect, and an imperfect cause must be followed by an imperfect effect. The man, who builds his dwelling of old and decayed materials, or makes his garments of rotten cloth, deliberately calculates to have them weak and insecure against the exposures of the elements and of wear, for in their very creation, he has provided the principles of their weakness and destruction. So he, who builds the dwelling of his spirit of poor and ill adapted material, of improper food and corrupted air, as plainly prepares the seeds of his own

feebleness and death. The manufacturer, who throws unwashed wool mixed with dirt and sticks into his machines, seems resolved to break and injure his cards, and to have cloth of feeble and unsightly texture; but not more resolved than we are to have disordered stomachs and imperfect bodies, when we feed ourselves with all sorts of crudities, absurd mixtures, and perverse cookeries.

If the dyer would not take the trouble to select the proper dye stuffs, or mixed these with any other material, and yet hoped to produce his nice shades, or if he continued to dip his silk in dyes, that had been used and exhausted, and expected to produce strong colors, we should call him a simpleton. What then shall we say of him, who mixes tobacco smoke or any other gas with his air, or breathes over and over again the atmosphere of a close room, and yet expects this besouled or weakened air to purify the blood!

In all these cases, in the living actions and dead combinations, the effect corresponds exactly to the cause. If we prepare right means in the arts, we have the desired results. If we use the right means in our bodies, we have health and strength, otherwise, we suffer and lose both health and strength.

There are no chances in this matter. It is true, we are told continually of the chances of sickness and the uncertainty of life. But God has left these to no sport of fortune. The ignorant chemist, who endeavors to make his salts out of all sorts of incompatible and corrupted elements, and sometimes finds the desired compound, but oftener finds very different ones, may as well talk of the chances of chemistry, as we of the chances of health, when we neither examine the laws of our organization nor regard them. A sailor, who knows neither the position of the stars nor the motions of the sun and moon, may as well complain of the uncertainty of astronomy, as man of the uncertainty of life.

Neither is there truly any premature death. No one dies before his vital powers are exhausted, or until some organ, which is needed in the vital process, fails. As the spendthrift, whose annual income might otherwise support him through life, mismanages his property, squanders his money, and thus wears upon his estate until the last mite is gone, and he is bankrupt, so men mismanage their strength, abuse their powers, waste their vital energies, until too little is left to carry on the process

of life. Then death comes and finds them all prepared, ready for him. His coming is not then premature. But in the eye of God, who gave us the means of a life of threescore and ten, this death is premature.

The laws of God are perfect and all consistent one with another. The physical laws recognise no interchange with the moral law. Each one requires absolute obedience. No matter how faithful we may be to the latter, or how holy the work in which we are engaged, if therein we violate one law of physical life, we inevitably suffer the punishment. The righteous judge upon the bench, on whose wisdom depend life and liberty, sinks beneath his overstrained mental exertion or the foul air of his court room. The sister of charity, confined with others' sicknesses, and the mother, long watching over her dying babe, without sleep, fresh air, or exercise, both fall victims to their neglect of the physical law. The minister, whose spirit is love, and life beneficence, but who concentrates in Saturday and Sunday the mental labor of a week, and rouses himself then into an unnatural excitement for the Sabbath, whose exercise is irregular, now violent and then with long intervals between, is punished with a broken constitution as well as others. A multitude, crowded into a church to hear the gospel preached, suffer as surely from the corrupted and carbonized air, as a crowd at the theatre, listening to profanity or looking upon sin. For "when the righteous turns from his righteousness and committeth iniquity, he shall even die thereby."

This unrelenting law neither regards motive nor pardons ignorance. "Sin is a transgression of the law." "And the consequences of a transgression of the physical laws are equally visited upon the body of the offender, whether he were acquainted with the laws or not," or whether he transgressed by his own free will or by force of another. The helpless infant, whom the indiscreet mother overseeds, suffers pain and sickness as surely as the glutton, who devours voraciously. In the foundering of the slave-ship at sea, the stolen victims will be drowned as soon as the ruthless kidnapper. When carbonic acid enters the lungs, it extinguishes life with equal certainty and rapidity, whether the heart of the sufferer be good or evil. On this subject, therefore, the first rule, that "sin is a transgression of the law," is universal; and equally universal is the last, that "the way of transgressors is hard."

Here we may be told, that many are acting in opposition to these laws, and yet they do not suffer. One works night and day, and is not broken down ; another never exercises at all, or eats all sorts of strange compounds, but has no dyspepsy ; a third never bathes, and has no eruption ; so also the voluptuary pursues his pleasures, the selfish prosecutes his worldly ends, and the negligent disregard their physical wants ; and "because sentence against an evil work is not executed speedily, therefore the heart of the sons of men is fully set in them to do evil." But let not these sinners flatter themselves, that they shall finally escape. For surely the judgment cometh sooner or later, as early as the sin exhausts the power of endurance. It comes immediately in the diminishing of the vital energies, taking away some of the power and enjoyment of life, and thereby laying the system open to the attack of disease. It comes often in shape of tangible disorder. The slightest error must produce a corresponding impairment or attenuation of life, though we may not regard it. But if we persist, we accumulate perceptible retribution, for "it shall not be well with the wicked, neither shall he prolong his days, which are as a shadow."

We see these ways innumerable, in which our vitality is taxed ; exposures, irregularities, hardships, indulgences, and neglect, all these either create active disease, or lessen the power of resistance to it, and therefore our life is weakened and our days are shortened.

The Benevolent Creator has given to all his creatures, the humblest and the highest, the means and opportunity of fulfilling the conditions of their existence. The vegetable has a fixed position, and its food is sent to it from the elements. It takes and digests such as is suited to its necessities, and fulfils its destiny. The lower animals have limited and unerring instincts, which select their food and govern their habits. Disease seldom comes upon them, and they fulfil their destiny. Man has neither fixed position to confine him, nor instincts to direct his life ; but he is endowed with intellect to discern the nature of his organs and their wants, and his relations to the external world, and he alone fails to fulfil his destiny. The laws of his life are fixed, he cannot bend them to meet his will. But the circumstances and the nutriment of his life are variable, and these are put under his control. For the due administration of these circumstances, and the proper application of the nutriment, the intellect and the conscience must be

in incessant action, for we have no other guide. Not a particle of food nor a drop of water should be taken, not a garment put on nor a limb moved without consideration. All these things may be for good or for evil, according to the correctness of the judgment, which shall determine them. Every one of us must judge for himself in all these matters: and upon our faithfulness in this use of our faculties will depend the measure of health and strength which we shall enjoy.

These are not usually taught as duties. By many they are considered as the mere tithes of mint and cummin, while weightier matters constitute the sum of the law. Some affect to despise the body and call it earthy, and therefore unworthy their attention. They think, they have higher work to do and nobler ends to attain than caring for food, raiment, and health. But He, who made the Heavens and offered man his second being there, made also the earth and appointed man's first being here; and if He could descend from the high Heavens to arrange our beautiful structures and their supporting elements, and give us the stewardship over them, how much more should we gladly fulfil all the conditions he has ordained for our good, and believe with St. Paul, that whether we eat or drink, or whatever we do, we must do all for the glory of God.

God having generously given us our physical constitutions and all things needful for their full enjoyment, and put us in charge over them, has made us free agents in this care of ourselves. We can choose the right or the wrong. We can be active, laborious, or sluggish. We can act from the higher or the lower motive. But to us will accrue all the consequences of our conduct. All the pleasure and the power, that grow out of discretion and faithfulness, will be ours; and all the pain, debility, and the early death, that follow ignorance and indiscretion, will be ours also. This is the law, established by the Creator, and promulgated for more than six thousand years in the human frame; and never, except in the days of miracles, which are not now, has it been suspended, relaxed, or changed. Its testimonies have been shown forth in every mistake of the means or purpose of existence, in every abuse of the blessings of earth, in the derangements that follow undue exercise of our faculties, in the weakness that succeeds neglect, in the shortened days of man. These proclaim the unyielding nature of the law of life, and the sure judgment that follows its violation.

From the beginning, we have been engaged in the vain struggle to bend the law to our caprices, our indiscretions, and our selfishness ; but have always been compelled to bow before the law, and oftentimes are crushed beneath it. The river of life flows along the valley. Loveliness and quiet reign along its banks, and there we may drink, and live out the natural term of life. But we place our dwellings on the hill-top, imagining the river will flow up to us, and there we perish in the morning or the noon of our days, for the river will not alter its course to meet our wishes. The Creator has made the performance of every duty to be accompanied by pleasure. There comes a joy with everything we do according to his bidding. But we have mistaken the means for the end ; we have regarded the accompaniment rather than the duty. We have forgotten the great purposes of our present being. We have eaten for appetite rather than for nutrition. We toil for riches, rather than for support. We involve ourselves in corroding cares and anxieties about things, which are not for us to do or obtain. We expose our bodies to undue heats and colds, and destructive changes. We have wrong notions of self-sacrifice. We give up that, which is not our own, but only entrusted to us for especial purposes ; and undertake burdens, which God has not given us strength to bear. We admit the caprices of fashion to influence our clothing, and often sacrifice comfort and health to beauty. The texture and the form of our garments are selected to suit other men's eyes, rather than the law of our necessities. And although these are permanent and universal, we see strange contrarieties in different persons and years. At one time, fashion demands that the neck be encased in scarfs and shawls and heated to constant perspiration ; in another age, the same fickle governess condemns us to expose the neck to the wintry cold. One sex walks abroad, shod in the stoutest waterproof leather ; while the other moves in silken hose and satin slippers, and both imagine they obey the same law of life.

Man has sought out many inventions. He has made many improvements in the arts and conveniences of life. But these have had, for their main object, comfort, economy, and facility of accomplishing business. Health has been a secondary purpose ; oftentimes entirely forgotten, sometimes injured by them. Our cooking stoves save fuel and labor ; but they make heavier bread and less digestible meats, and fill our houses with noisome vapors. Our air-tight stoves give a more comfortable tempera-

ture, with less cost of wood, but they prevent that ventilation which the lungs absolutely require. Our chairs are more elegant than those of our fathers; but the chairmaker has not yet thought to consult the anatomy of the human frame and provide for its best support and least distortion.

Our social refinements may have increased our mental pleasures; but, in many ways, they have diminished our physical enjoyments. With the advancement of civilization have come the various grades of what is miscalled innocent dissipation, in which some vitality is exhausted. In this pursuit of pleasure, it is mournful to see how disproportioned is the satisfaction, that is found in the disobedience, to the pain and loss which must be suffered. This partial reversing of day and night; the indulgence of appetites out of due season; the unusual glow of excitement, are all a tax upon life. Our social gatherings are mostly in the night. The hospitable entertainer desires to give his guests the highest physical and intellectual exhilaration. He provides the nicest cakes for their palate; but feeds their lungs with the foulest atmosphere. Carefully numbering his company, he enlarges his table, so that there may be no lack of eatables, which they do not want; but he neither enlarges his rooms nor increases the quantity of air, which they must have. What indigestible provision would be sufficient to feed his family with dyspepsy, is multiplied tensfold to fill that increase of mouths; but what air is no more than sufficient to supply his family with health, is now made to supply a multitude; and our host, mistaking the ways of benevolence, serves out death without measure, while he deals out life with the most niggardly economy. But God, who knoweth our frame, charges man with all his folly, and demands the penalty for each and every disobedience of the law of life.

Seeing, then, the law is inflexible, and we must govern ourselves by it, and that our short comings of life are chargeable not to any caprice or defect in the law, but to our failure to fulfil its conditions, it would seem our first duty to learn its statutes. Herein is the beginning of our error. We have not studied the law. Physiology has neither been taught in our schools, nor made a subject of examination at home. We assume to direct these complicated machines of our bodies, and yet we do not examine their structure or their powers. We have not been taught to watch our health as we do other mat-

ters. We educate ourselves to manage our beasts and our dead machinery, from which we derive profit or pleasure. For every lower responsibility we deem a fitting education necessary. The engineer learns the structure of his engine, and the nature of the elements with which it is to operate. He ascertains the force of steam, and the strength of his boilers and his pistons, and determines the quantum of power which these with safety can bring to bear upon his intended work. With this preparatory knowledge, he assumes his charge, but watches it anxiously afterward. He carefully selects his fuel and his water, so that they may generate the greatest force with the least wear and tear of his instrument. He applies this to no impossible purpose, and permits no unnecessary friction. Hence his engine lasts until it is worn out by proper use; and all accidents he charges to his own ignorance or folly.

But he takes no pains to learn the structure of his own body, nor the effects, of one or another method of nourishing it, upon its power and durability. He feeds it with all sorts of crudities, and leaves it, to the accident of another's will, to be nourished right or wrong. Failing sometimes of proper management, his body dies. But his engine, which he directed with all his wisdom, survives him, and passes into the hands of another.

The hostler understands the utility of bathing and friction for the skin of his horses, but for himself and for his children this duty is seldom performed.*

The education of our children is intended to prepare them for the duties of the world. It fits them for what they may and probably will do; but not for what they *must* do. God has made it every one's duty to live, and to direct the machinery of his own life; but he has not made it necessary for every one to be a scholar, a calculator, or traveller,—still less to paint, to draw, or watch the motions of the stars. Therefore, as early as it can be well understood, physiology should be taught in our schools, and it should take precedence of all the higher branches and accomplishments.

In after life we have facilities offered for understanding every

* We visited, a few days since, some public works, where we found that one hundred and thirty-two laborers slept in one room about sixty feet by twenty; and among these we had evidence that bathing was a rare occurrence. We saw also the cattle. They were lodged in ample stables, and their sleek hides showed that they did not suffer the privation in that organ which the human laborers endured.

interest but this which each one has in his own vitality. We have treatises in abundance upon every science and every art ; and those, who engage in these, think it necessary to furnish themselves with such works. The dyer has his work on colors ; the engineer his book on railroads ; the farmer buys his volumes upon agriculture, upon cattle raising,* on swine breeding, and even on poultry ; the housewife has her books on cookery. These indeed flood the land, but they relate to wholly subordinate matters ; — what will best nourish the family, and give them the greatest vigor and comfort, the highest moral and spiritual energy, is not taught in any book which our housewives usually possess. Works on physiology and health, and treatises on the management of infancy, are rarely met with, even in the houses and nurseries of those who study so faithfully the best methods of raising their fowls and their quadrupeds ; or who have sought, throughout the world, for the best means and methods of pampering the appetite.

There is not only a general want of knowledge of the laws of life, but, among many, a contemptuous disregard of them. Few feel a responsibility for every action of their lives. Some openly declare, "that life is not worth all this trouble, and they may as well die at once as to have this perpetual fear of death." With them caution is timidity, and timidity meanness, and rashness courage ; and they rush heedlessly through the circumstances of the world. They stumble and fall over the obstacles which they might have avoided, if they had taken as good care of themselves as they do of their horses, their carriages, and their watches.

It is also a common notion that diseases are the direct afflictions of Providence, which no human sagacity can foresee and no human means avoid.

" Diseases are thy servants Lord,
They come at thy command,"

is said by the pious poet, and echoed from a thousand pulpits. Most men have believed the doctrine, and therefore have not

* We have made diligent inquiry among those engaged in cattle raising, and find that, with careful farmers, hardly one calf dies out of ten ; and one lamb out of eight dies. Whereas, among the children of these very men, who prepare themselves so faithfully to rear their cattle and sheep, one out of every four dies in its mother's arms.

felt themselves called upon to do anything to prevent them ; but they make it a part of their religious duty to submit to these dispensations when they come. Diseases are indeed the servants of God, but the poet has not told for what purpose they serve him ; nor do the people seem to understand their object. They come not on account of our general sins,—our Sabbath-breaking, our pride, our irreligion,—but on account of our special violations of those laws of God established for our physical wellbeing. They are not sent to the infidel and the atheist, but to those idolaters “whose God is their belly,”—who sacrifice their sleep to mammon and to their lusts. They are not sent to wean us from this world, but because we have already weaned ourselves so far from the milk of life. Those, who tell us that diseases are visitations for general sins, do not understand their message. From the least neglect of any law comes the loss of that comfort and strength, which follows a strict fulfilment of our duty. Debility, pain, disease ensue. The evil is slight at first, proportioned to the extent of our error, to warn us of danger. If we disregard the warning, it speaks again and louder. If we persevere, we are prostrated by sickness. If then we have not reduced the vital energies below the power of reaction, we may recover. But if we have disobeyed the law and been deaf to the repeated warnings, we sink beneath the weight of the judgment ; our probation is ended ; and we pass to the Great Judge to give an account of our stewardship here.

From the belief, that diseases are the especial interpositions of Providence, men are led into a second and a corresponding error, that another especial interference is needed to heal them ; and therefore, if never before, they now acknowledge the hand of God and implore his mercy to restore them. They do not pray for greater wisdom to know, and more faithfulness to obey his laws thereafter ; but they request, that those laws may now be suspended for their particular benefit. But God’s ways are not as man’s ways. The ebb and flow of life, and the ebb and flow of the tide, are equally established in his eternal counsels, and neither of them waits nor changes purposes for man ; for till heaven and earth pass, one jot or one tittle shall in no wise pass from the law that governs them. If we breathe air over and over, weakened by repeated respiration or corrupted with other gases and smoke, just so much strength is given as its

reduced power can impart and no more. This is debility. If we feed ourselves with innutritious and ill-prepared food, we shall have as much regularity in our organs as these can give and no more. This is derangement. If we overwork our frames, we shall waste our powers and be exhausted. If, then, we pray that God will give to a corrupt and weakened air the effect of the pure and the invigorating, and to unsuitable food the effect of the suitable, or that our strength may hold out beyond its measure,—if, in any case, we pray that the wrong and the inadequate may be followed by those consequences which God has appointed to follow only the right and the sufficient; or if, when those consequences shall have come upon us, we ask that they may be removed, and others, the greater and more desirable, be substituted in their stead,—we are asking for as certain and as hopeless revernsions of the eternal laws as would the chemist, who should pray that weak and impure acids may make as perfect salts as the strong and the pure; or as the mariner, who should pray that the water might not leak through the crevices between the planks of his vessel, which he had selected of improper materials and imperfectly joined together; or as the merchant, who should pray that God would not permit his bark, which he has overloaded, to sink.

It is also made a part of our religious instruction, that for every man there is a fixed bound of life, and therefore no one dies before his time. Mourners are consoled with the reflection, that nothing could have arrested the hand of death, for he was the messenger of God. This is indeed a great and melancholy truth. Death is the messenger of Heaven. But death is appointed as the natural effect of disease, and we have already seen how disease comes. We do not, however, receive it, as a universal truth, that no one dies before his time. The suicide, who suddenly extinguishes his life with a pistol, is admitted to be an exception. He, who voluntarily plunges into the midst of deadly contagions, will be excepted also, because he has shortened his days by his own hand. So every one, who, by the misuse or neglect of his faculties, by excessive labors on his farm, among his merchandise, or in pursuit of others' good, exhausts his powers of life, shortens his days by his own hand, though not by his own volition, and dies before his time.

The suicide, who eats poison and dies, strikes us with a just horror, for we feel it a heinous sin to spurn God's blessing of

life. We are also shocked at the sight of one, who voluntarily cuts off a limb or puts out an eye, because he thus impairs his life, and has inflicted upon himself partial death. But all impairment of life is partial death. And he, who is sick, feeble, or wanting in the command of his faculties, is so far dead; and if this be produced by his disobedience, he has committed partial suicide.

We may now be told, that it is useless to strive with God; that we cannot resist his will, and prevent disease or ward off death. But we are not striving against God, in the maintenance of health, and prolongation of life. In doing this, we are co-workers with Him. He invites us at all times to drink from the fountain of life, and enjoy its cheering invigoration. His loving kindness spreads everywhere the elements of health. It is by refusing or neglecting to appropriate them to our use, as he has appointed, that we strive against his will.

We may be asked, if we are so presumptuous as to suppose, that we can add one cubit to our stature, or one day to the period of our existence? We have before said, that though the laws of life are fixed, yet the circumstances of life are variable. These are left very much to our control. We have availed ourselves of this privilege in the better development of life in the vegetable creation, and even in the lower animals. Our delicious fruits, our nutritious roots, and our gorgeous flowers, in unfavorable circumstances, were very different from what we now find them. By our diligent study of their conditions of life, and our faithful application of the means of protection and support, we have transformed the acrid and disagreeable *opium graveolens* into the delicious celery: we have improved the bitter crab and sloe into the luscious and almost infinitely varied apple and pear. By the same attention to the law of growth and development, we have improved our cattle and our swine. Applying the same attention to the law of human life, we see no reason to suppose, that our bodies might not all be preserved in health and maintained in unremitting vigor until old age, as well as those of the brutes.

We do not pretend, that the whole of this law is yet ascertained, or that we could, by any faithfulness to all that is now known, avoid every physical evil. Far be it from us to be thus presumptuous.

"Of course," says Mr. Mann, "I do not mean, that all diseases could be abolished at once, even by the universal diffusion

of a knowledge of their causes: or that the era foretold by the prophet would be ushered in, when ‘the child shall die a hundred years old,’ and when there shall be no ‘old man that hath not fulfilled his days.’ The violation of those beautiful and benign laws, which the Creator has inwrought into our system, has been too heinous, and too long persevered in by the race, to be expiated or atoned for in a single age. Disease and debility transmitted through a long line of ancestors have acquired a momentum, by the length of the descent, which cannot at once be overcome.”—p. 71.

We have hereditary diseases—the seeds of consumption, scrofula, insanity, and imperfect constitutions, which we have received from our parents. The effects of disobedience are not confined exclusively to the offender, for God is now “visiting the iniquity of the fathers upon the children, and upon the children’s children unto the third and to the fourth generation.” But we believe, that if we would give the whole power of our intellect to learn the conditions of our existence, and our moral powers to fulfil them as correctly and as faithfully as we study the nature and watch the interests of our cattle, or our machinery, we should in a single generation be saved from many diseases, and very materially prolong life.

E. J.

